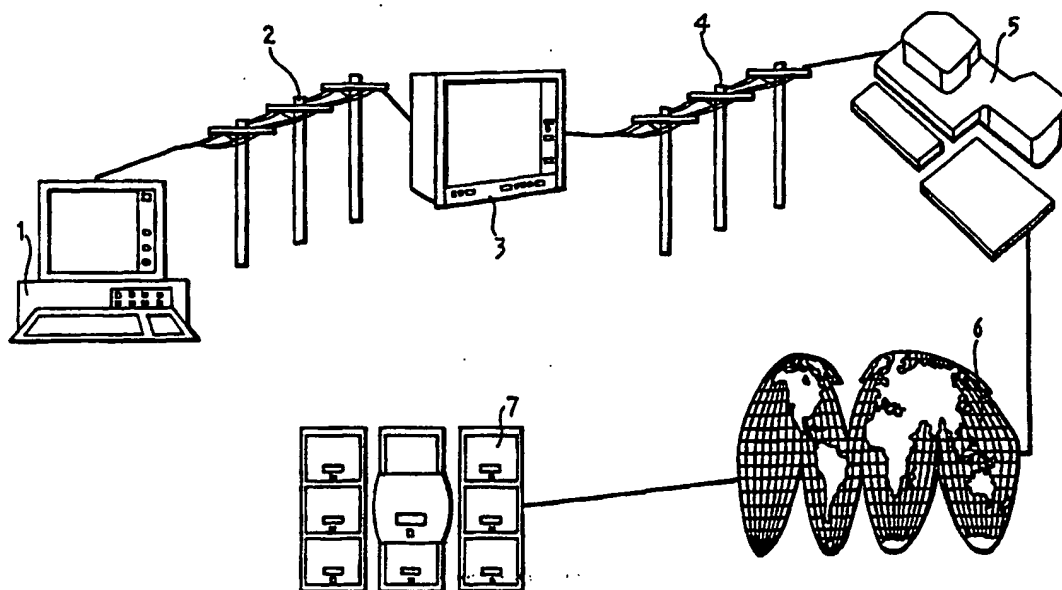




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : H04L 9/00	A2	(11) International Publication Number: WO 98/59455 (43) International Publication Date: 30 December 1998 (30.12.98)
(21) International Application Number: PCT/EP98/03200 (22) International Filing Date: 28 May 1998 (28.05.98) (30) Priority Data: TO97A000546 23 June 1997 (23.06.97) IT (71)(72) Applicant and Inventor: PERETTI, Giulio [IT/IT]; Via Torino, 90, I-10090 Castiglione Torinese (IT). (74) Agents: BOSOTTI, Luciano et al.; Jacobacci & Perani S.p.A., Corso Regio Parco, 27, I-10152 Torino (IT).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>Without international search report and to be republished upon receipt of that report.</i>

(54) Title: A SYSTEM FOR CONTROLLING TRANSACTIONS ON COMMUNICATION NETWORKS

**(57) Abstract**

When the user (1) of a communication network (7) has identified a product or service of interest, he issues an order for the supply of the product/service by inputting into the network his particulars, including a respective code identifying his connection to the network manager (3). The sales manager (7) sends a request to the network manager (3) to check that the identification actually corresponds to the user (1) who issued the order. Upon confirmation of the matching of the code, the sales manager (7) puts the supply of the product/service into effect by transmitting an indication relating to the corresponding amount to the network manager (3) who charges the user (1) by the normal means used for charging connection to the network (6) and hence typically by charging by means of a bill.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon			PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

A system for controlling transactions on communication networks

The present invention addresses the problem of controlling transactions on communication networks such as - for example - the internet.

A network such as the internet is a large world communication network spread widely over the entire planet and interconnects computer networks owned by public bodies, companies and private individuals. It is thus an integrated structure, the users of which can theoretically be divided into two categories: suppliers of information who use computers connected to the network for publicizing information or selling products and/or services and users who use computers to access information available on the network in order to purchase the products or services offered or simply to communicate with one another.

In fact, the internet currently already offers very varied services mainly connected with commercial and cultural information and entertainment (and the situation is destined to develop further in this direction); it is also possible to examine products for sale and to purchase them. In almost all cases, conventional means are used for payment (for example: cash on delivery, credit transfers or bank payments, charging of accounts held with the vendor by the purchaser of the goods or service, credit cards, etc.).

All of these solutions suffer to a greater or lesser extent from problems arising from the possible slowness of the service and from safety aspects which in turn can give rise to further delays. In particular, for the person offering the product or the service, there is the problem of checking that the purchaser is making or has made the payment and/or

that the purchaser is in fact a person interested in the purchase and not a person committing an illegal act and/or a nuisance. Conversely, the purchaser or potential purchaser may have reasons for being unwilling to input "sensitive" data such as, for example, a credit-card number, into the network since he is aware - particularly as a result of warnings which appear repeatedly on the network - that the network cannot ensure conditions of absolute discretion in relation to such data.

Moreover, there is the problem that all of the forms of payment described above presuppose the need for access to and/or availability of specific instruments of payment which may differ from one country to another. Although they are normally available to a commercial user, these instruments may not be available to a private person who purchases certain goods and services occasionally, generally for a small sum, (a so-called "minipayment"). Since it is inconceivable that such a user would provide himself with what is required specifically to effect irregular payments of small amounts, the consequence is very clearly that the person usually gives up the possible purchase.

The object of the present invention, which has the characteristics claimed in the following claims, is to provide a radical solution to the problems mentioned above.

Its implementation is based essentially on the recognition of the fact that any user connected to a communication network such as the internet is connected by means of a telephone terminal and hence by means of a subscriber point intrinsically arranged for counting and charging calls made.

Another aspect of the solution according to the invention makes use of the presence on the network of so-called "sales

managers" which are associated with banks, and which constitute respective internet sites to which suppliers and vendors are connected so that it is possible to input into the network the codes of the various products/services offered, electronic forms describing the characteristics and the price, as well as the actual product, if it is a product which can be sold by means of the internet.

According to the currently-preferred embodiment of the invention, the customer selects the product and orders it by introducing himself by means of his normal P.I.N., the manager sends him the product/service directly, if it can be delivered by means of the internet, or passes the order to the vendor who provides for delivery. The cost is automatically charged on the bill on which calls are charged, without the need to establish contracts beforehand, for example, with a banking institution, etc.

The solution according to the invention permits checking in real time of an unambiguous and unmistakable match between the data by which the caller introduces himself to the virtual store and the number or code of the line connecting him to the internet. From this point of view, the preferred solution is that of the transmission of an element identifying the caller (for example, the telephone number of the telephone connection) to the recipient of the call.

The invention will now be described, purely by way of non-limiting example, with reference to the appended drawings, in which:

Figure 1 shows schematically a possible configuration of the system according to the invention,

Figure 2 shows schematically the possible arrangement of the respective service, in the form of a block diagram, and

Figures 3 to 13 show successive possible stages of the man-machine dialogue characteristic of the system according to the invention.

Figure 1 shows a typical configuration of the connection of a terminal 1 to a communication network 6. Specifically, the terminal 1 (which will be assumed below to be used by the user of the system according to the invention, or purchaser) is connected to a so-called service provider 5 by means of a system of lines 2, 4 controlled by a body (a telephone company or the like) acting as a line manager 3 and as a user-checking body. The provider connects the user 1, by means of the internet network 6 or an equivalent communication network, to a so-called virtual store 7, constituted by another terminal or group of terminals which is connected to the network 6 and which offers certain goods or services to the user/purchaser 1 by presenting them on a respective site or group of sites.

The above-described method of connection may be considered widely known in the art and does not therefore require further description herein.

Briefly, the system according to the invention is used on the basis of the following methods.

The user 1 is connected to the network 6 by means of his manager 3 and the respective lines 2, 4 as well as his provider 5. By navigating on the network, he discovers the site or set of sites connected to the vendor 7 and, after viewing the various electronic pages of the site or sites in

question, decides to purchase a certain product/service which interests him.

He then goes on to fill in the purchase form (shown in Figure 6) by inserting his particulars, including the code of his line or telephone number (or equivalent identification).

At this point, upon receipt of the respective message, the sales manager 7 sends a request to the line manager 3 to check that the identification supplied actually corresponds to the code or telephone number of the user 1 connected to the site.

Upon receipt of this information (which can be regarded essentially as a consent datum for the transaction), the vendor 7 compares it with that input by the user 1 and, if it corresponds (positive consent datum) implements or puts into effect the procedure relating to the supply of the product/service purchased. If it does not correspond (negative consent datum) a data-inconsistency message is sent to the user 1, usually accompanied by an invitation to repeat the purchasing formalities, a final refusal being implemented only when the inconsistency condition - which condition puts in doubt the actual identity/legitimacy of the person introducing himself as the purchaser - has been confirmed one or more times. Naturally, in these conditions, the user 1 can choose to disconnect himself from the site or to re-key the correct code which will permit transmission of the material.

However, it is clear that at least some of the aforementioned comparison and transaction-consent operations, etc., may also be entrusted to the manager 3 so that a single body may combine the functions of the entities indicated 3 and 5 or 3, 5 and 7 herein.

Upon completion of the connection with the user 1, the sales manager 7 transmits to the line manager 3 the data relating to the user for charging on the bill.

As well as being very convenient for the purchaser, the system according to the invention thus offers better safety margins than, for example, a purchase made with a credit card. This is because the purchase and the charging take place only after the user's line has actually been checked in real time and without the transmission of codes or credit-card numbers which could be used fraudulently or detected in unauthorized manner by third parties.

The diagram of Figure 2 is a general view of the main functions necessary for the full and preferred implementation of the system according to the invention. This implementation is carried out in an internet context in accordance with known criteria which do not need to be described in detail herein.

In general, the system is configured with a manager unit 10 (which is usually resident with the so-called vendor 7 but may also be located with the network manager 3) for developing and supplying to the user 1 a set of information consisting essentially of the following components:

- general information 11,
- information relating to the service performed 12,
- index of the families of products/services 13,
- method of filling in the purchase form 14,
- information for the user 15,
- exit function possibly with suggestions and complaints function 16.

The families index 13 is then divided into sub-functions such as a view 17 of the products/information relating to the services supplied of the family selected, with further functions, for example, a function 18 for looking up and displaying the product.

In addition to the on-line user-checking function 22 (in accordance with the criteria described above), the function 14 for filling in the purchase form also provides, in general, for a recapitulation and confirmation function 19, a function 20 for transmitting the charging details to the manager 3, as well as for functions 21 for taking the necessary action for the supply of the product/service to the customer.

Figures 3 to 13 show some of the functions in question in the form of possible exemplary "displays" which may appear on the user interface.

More specifically, these are the following functions:

- general information 11 (Figure 3),
- information on the service performed 12 (Figure 4),
- index of the families of products 13 (Figure 5),
- filling-in of the purchase form 14 (Figure 6),
- information for the user 15 (Figure 7),
- exit 16 (Figure 8)
- view of products of the family selected 17 (Figure 9),
- product information 18 (Figure 10),
- recapitulation for confirmation 19 (Figure 11),
- transmission of data to line manager 20 (Figure 12), and
- on-line user check 22 (Figure 13).

Naturally, the principle of the invention remaining the same, the details and forms of embodiment may be varied widely with respect to those described and illustrated, without thereby departing from the scope of the invention.

CLAIMS

1. A system for controlling transactions on a communication network (6) with a plurality of users (1, 7) connected to the network (6) by means of at least one respective network manager (3), characterized in that it comprises:

- user interface means (1) for enabling at least one of the plurality of users who may act as a user purchasing products and/or services to input into the network (6) at least one respective identification characteristic of the connection of the purchasing user (1) to the network (7) by means of the network manager (3),

- further user interface means (7) which can enable at least one other of the plurality of users to take on the role of a supplier of the products and/or services,

- checking means (3, 7) for identifying the respective identification and for checking that it corresponds to a reference identification unambiguously characteristic of the connection of the purchasing user (1) to the respective network manager (3) in order to generate a corresponding datum of consent to the transaction in dependence on the match between the respective identification input by the purchasing user (1) at the time in question and the reference identification, and to put into effect the supply of the products and/or services to the purchasing user.

2. A system according to Claim 1, characterized in that, as a result of the generation of the datum of consent to the transaction, the further user-interface means (7) send to the respective network manager (3) a respective charge datum corresponding to the products and/or services supplied, and in that the network manager (3) charges a sum corresponding

to the charge datum to the purchasing user (1) in a manner co-ordinated with the charging of the connection of the purchasing user (1) to the network manager (3).

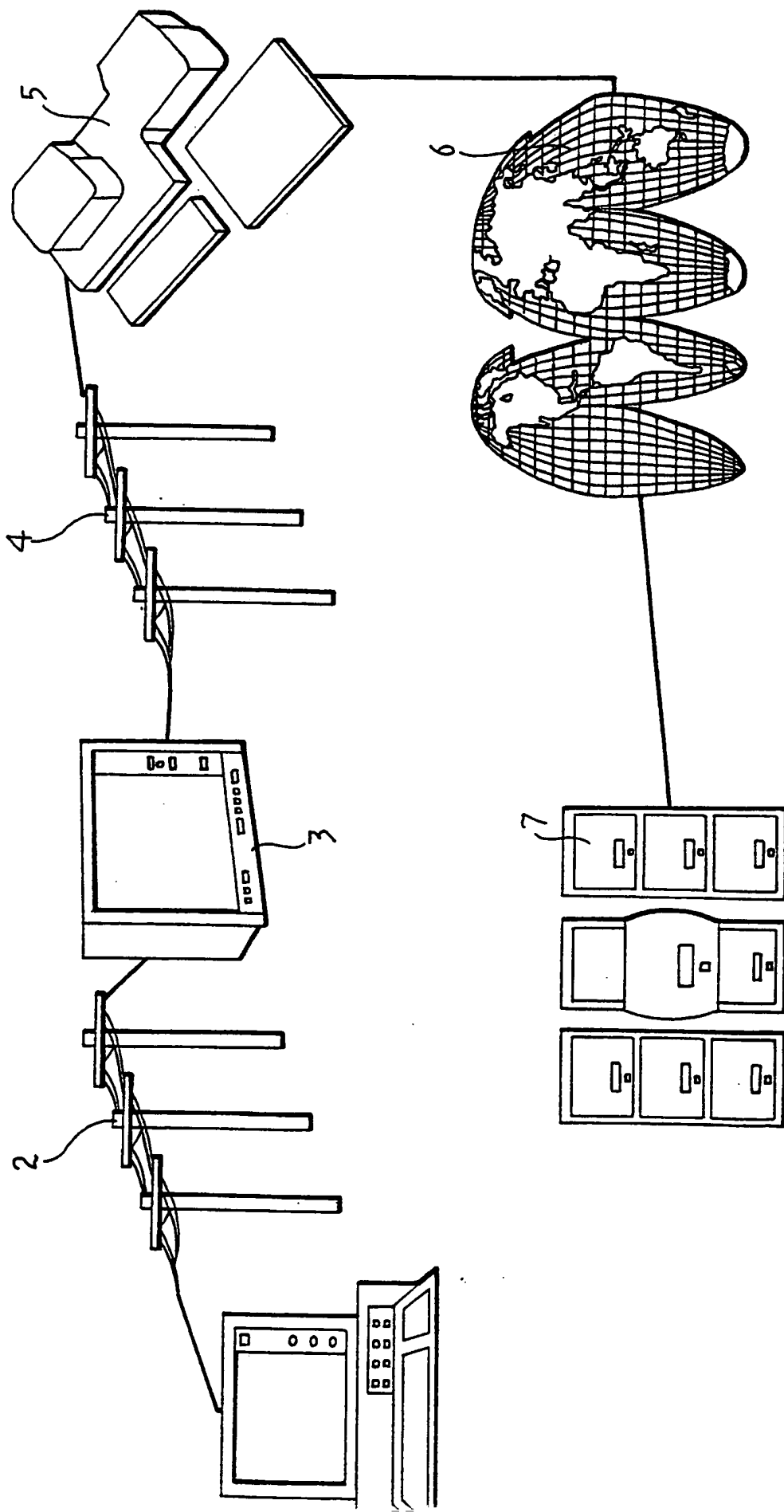
3. A system according to Claim 2, characterized in that the charging takes place by means of a bill.

4. A system according to any one of Claims 1 to 3, characterized in that the further user interface means are configured for:

- detecting the input of the identification input by the purchasing user (1) at the time in question, and
- transmitting to the network manager (3) a request for the issue of the datum of consent to the transaction.

1/5

FIG. 1



2/5

FIG. 2

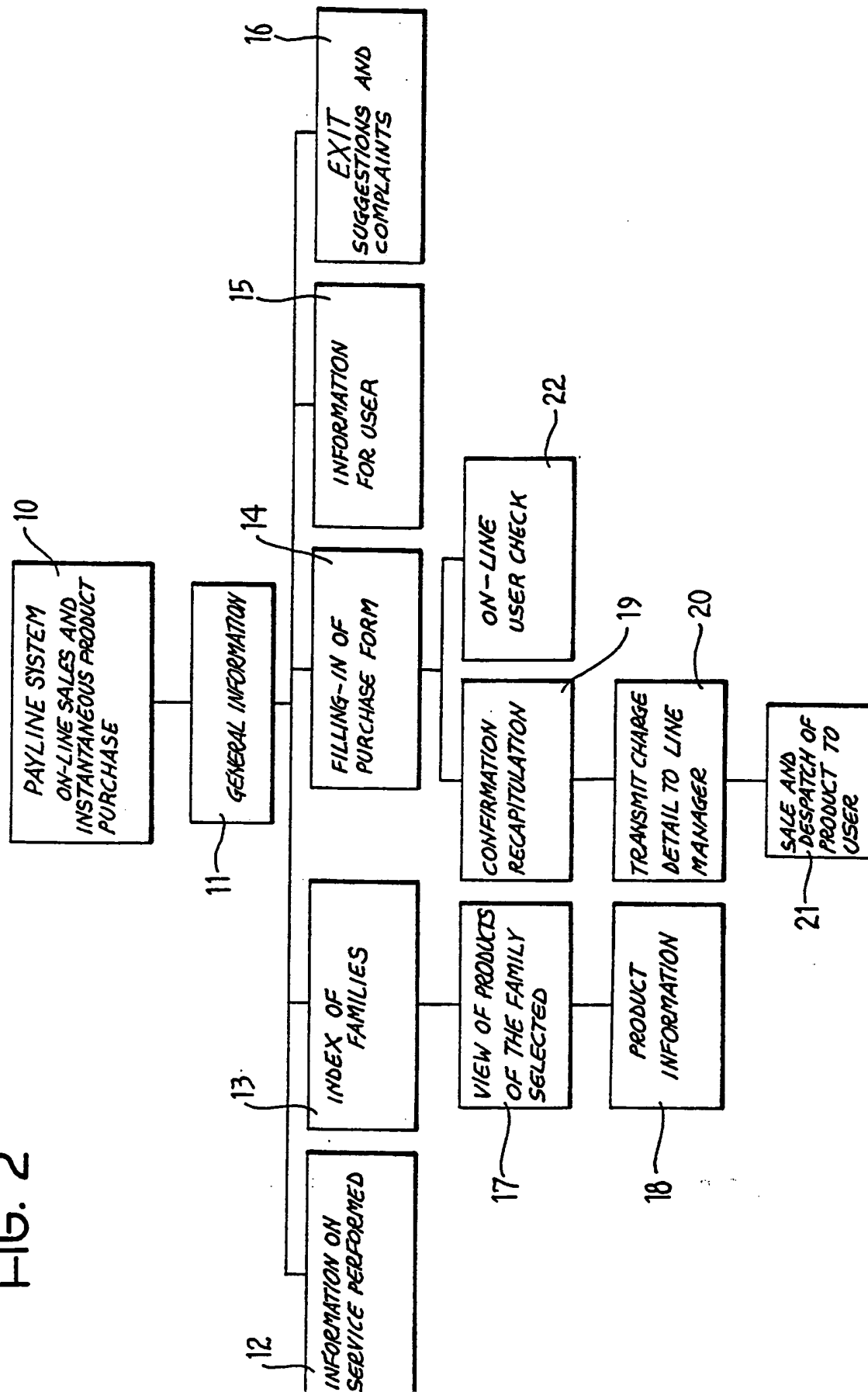


FIG. 3

GENERAL INFORMATION
• INFORMATION ON THE SERVICE
• VIEW OF THE PRODUCTS
• COMPLETION OF PURCHASE FORM
• SALE AND TRANSMISSION OF PRODUCT TO THE USER
• INFORMATION FOR THE USER
• EXIT

FIG. 4

INFORMATION ON THE SERVICE
• A VIRTUAL STORE OR OFFER IS INVOLVED
• ACCESS TO AN IMMENSE DATABASE OF ELECTRONIC PAGES, BOOKS, IMAGES, ETC. PROVIDED BY VARIOUS COMPANIES
• IT IS POSSIBLE TO VIEW THE PRODUCT (IN A LIMITED VERSION) AND TO PURCHASE IT, WITH PAYMENT BY CHARGING ON A BILL

FIG. 5

INDEX OF FAMILIES OF PRODUCTS
• LITERATURE
• HISTORY
• SPORT
• BULLETINS
• GRAPHICS
• FILMS
• NEWS

FIG. 6

FILLING-IN OF PURCHASE FORM
• NAME SURNAME
• ADDRESS
• LINE CODE No. OR TELEPHONE No.
• E - MAIL
• ARTICLES PURCHASED
• 1ST ITEM CODE
• 2ND ITEM CODE
• 3RD ITEM CODE
• CONFIRMATION

FIG. 7

<p>INFORMATION FOR THE USER</p> <hr/> <ul style="list-style-type: none"> • DAILY PURCHASE REPORT • TOTAL REPORT (FROM THE 1st CONNECTION WITH DETAILS OF COSTS, DATES).

FIG. 8

<p>EXIT</p> <hr/> <ul style="list-style-type: none"> • ANY SUGGESTIONS BY THE USER • COMPLAINTS • •

FIG. 9

<p>VIEW OF PRODUCTS OF THE FAMILY SELECTED</p> <hr/> <p>LITERATURE</p> <p>LUCA GOLDONI "STIAMO LAVORANDO PER VOI" (WE ARE WORKING FOR YOU) COD.AX28000LD</p> <p>LUCA GOLDONI "SEMPRE MEGLIO CHE LAVORARE" (ALWAYS BETTER THAN WORKING) COD.AZ31000LD</p>
--

FIG. 10

<p>PRODUCT INFORMATION IN LIMITED VERSION</p> <hr/> <ul style="list-style-type: none"> • THE USER CAN DISPLAY THE PRODUCT IN LIMITED FORM
--

5/5

FIG. 11

RECAPITULATION FOR CONFIRMATION	
• NAME SURNAME	FULVIO DAMBROSI
• ADDRESS	VIA CREA 10 TURIN
• TELEPHONE	011/679246
• E-MAIL	FULVIO@CSG.IT
• ITEM	AX280000 LD LUCA GOLDONI "STIAMO LAVORANDO PER VOI" (WE ARE WORKING FOR YOU)
• PRICE	LIRE 28,000
• CONFIRMATION FOR ACCEPTANCE OF ORDER	

FIG. 13

ON-LINE USER CHECK	
• THE VENDOR ASKS THE LINE MANAGER FOR THE CODE OR TELEPHONE NUMBER OF THE USER ON LINE	
• IF THE NUMBER CORRESPONDS TO THAT INPUT BY THE USER THE VENDOR PROCEEDS WITH THE SALE	
• IF IT DOES NOT CORRESPOND, HE INDICATES TO THE USER THE INCONSISTENCY WHICH DOES NOT PERMIT THE SALE TO PROCEED	

FIG. 12

TRANSMISSION OF DATA TO LINE MANAGER	
• BEFORE SENDING THE MATERIAL PURCHASED TO USER, THE PROGRAMME WILL HAVE TO SEND TO THE MANAGER OF THE TELEPHONE LINES A PACKET OF DATA, IN WHICH HE WILL HAVE TO SPECIFY:	
• USER'S NAME	
• USER'S TELEPHONE NO. OR CODE NO.	
• CODE OF MATERIAL PURCHASED	
• AMOUNT TO BE CHARGED TO THE USER	

THIS PAGE BLANK (USPTO)

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 98/03200

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 G07F19/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 G07G A47B G07F H04Q H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 311 572 A (FRIEDES ALBERT ET AL) 10 May 1994 see abstract; figures 4-6,17 see column 10, line 8 - column 13, line 21 ---	1-4
E	EP 0 848 361 A (NIXU OY) 17 June 1998 see the whole document ---	1-4
A	WO 97 03410 A (EGENDORF ANDREW) 30 January 1997 see the whole document ---	1-4
-/--		

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

17 December 1998

Date of mailing of the international search report

28/12/1998

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Guivol, O

INTERNATIONAL SEARCH REPORT

Inter: nal Application No

PCT/EP 98/03200

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>SIRBU M ET AL: "NETBILL: AN INTERNET COMMERCE SYSTEM OPTIMIZED FOR NETWORK DELIVERED SERVICES"</p> <p>DIGEST OF PAPERS OF THE COMPUTER SOCIETY COMPUTER CONFERENCE (SPRING) COMPCON, TECHNOLOGIES FOR THE INFORMATION SUPERHIGHWAY SAN FRANCISCO, MAR. 5 - 9, 1995,</p> <p>no. CONF. 40, 5 March 1995, pages 20-25, XP000577034</p> <p>INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS</p> <p>see the whole document</p> <p style="text-align: center;">----</p>	1-4
A,P	<p>EP 0 812 081 A (SONY CORP)</p> <p>10 December 1997</p> <p>see abstract; claims; figures</p> <p style="text-align: center;">----</p>	1-4
A	<p>EP 0 501 697 A (AMERICAN TELEPHONE & TELEGRAPH) 2 September 1992</p> <p>see the whole document</p> <p style="text-align: center;">----</p>	1,4
A	<p>EP 0 658 862 A (AT & T CORP) 21 June 1995</p> <p>see abstract; claims 1-17; figure 1</p> <p style="text-align: center;">----</p>	1,2
A	<p>EP 0 618 539 A (KIM SOON IK ;OHNO TOSHIO (JP); LEE BYUNG KE (JP)) 5 October 1994</p> <p style="text-align: center;">----</p>	
A	<p>GIFFORD D K ET AL: "PAYMENT SWITCHES FOR OPEN NETWORKS"</p> <p>DIGEST OF PAPERS OF THE COMPUTER SOCIETY COMPUTER CONFERENCE (SPRING) COMPCON, TECHNOLOGIES FOR THE INFORMATION SUPERHIGHWAY SAN FRANCISCO, MAR. 5 - 9, 1995,</p> <p>no. CONF. 40, 5 March 1995, pages 26-31, XP000577008</p> <p>INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS</p> <p style="text-align: center;">-----</p>	

INTERNATIONAL SEARCH REPORT

information on patent family members

Inter national Application No

PCT/EP 98/03200

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5311572	A	10-05-1994	NONE	
EP 0848361	A	17-06-1998	AU 5224698 A WO 9826381 A	03-07-1998 18-06-1998
WO 9703410	A	30-01-1997	US 5794221 A AU 5986596 A CA 2226253 A EP 0845125 A	11-08-1998 10-02-1997 30-01-1997 03-06-1998
EP 0812081	A	10-12-1997	JP 9325994 A	16-12-1997
EP 0501697	A	02-09-1992	AU 640855 B AU 1089692 A CA 2059078 A,C JP 5095405 A MX 9200763 A US 5329589 A	02-09-1993 03-09-1992 28-08-1992 16-04-1993 01-08-1992 12-07-1994
EP 0658862	A	21-06-1995	US 5521966 A CA 2118547 A,C CN 1120202 A JP 7200425 A SG 52575 A	28-05-1996 15-06-1995 10-04-1996 04-08-1995 28-09-1998
EP 0618539	A	05-10-1994	WO 9407205 A JP 6243150 A	31-03-1994 02-09-1994

THIS PAGE BLANK (USPTO)